AMENDMENTS TO THE CLAIMS

Claims 8, 10, 18, and 20-24 were previously canceled.

Please amend claims 1, 12, 14-17, 19, and 25-26.

Please replace the claims with the following:

1. (Currently Amended) A device for monitoring a user's blood pressure while the user is ambulatory, the device comprising:

a blood pressure sensor comprising:

a motion sensor for monitoring motion of the user and configured to generate motion information in response; and

a blood pressure monitor comprising an optical system comprising a light source and a light detector configured to generate a time-dependent waveform comprising a primary peak and a reflective peak that are, collectively, representative of the user's blood pressure ~~related to the user's heart beat~~; and

a body-worn processing unit, connected to the blood pressure sensor through a cable, comprising:

a microprocessor for receiving the time-dependent waveform from the blood pressure monitor and motion information from the motion sensor, the microprocessor comprising computer code that controls the microprocessor to: 1) ~~analyzes~~ analyze the primary and reflective peaks comprised by the time-dependent waveform from the blood pressure monitor with a mathematical model by varying parameters of the model until they correspond to the amplitudes of the primary and reflective peaks; 2) analyze the motion information from the motion sensor to distinguish between time-dependent waveforms generated while the user is moving and while the user is at rest; and 3) ~~calculates~~ calculate a blood pressure value from parameters of the model determined from the time-dependent waveform generated when the user is at rest.

2. (Original) The device according to claim 1 wherein the motion sensor is an accelerometer, a piezoelectric device or a mercury switch.

3. (Previously Presented) The device according to claim 1 wherein the motion sensor is a software algorithm that analyzes the time-dependent waveform from the blood pressure monitor to determine motion.

4. (Original) The device according to claim 3, wherein the software algorithm is computer code operating on the microprocessor.

5. (Previously Presented) The device according to claim 6, further comprising a wireless transmitter operating a wireless protocol based on 802.15.1, 802.15.4, part-15, or 802.11.

6. (Previously Presented) The device according to claim 1 further comprising a wireless transmitter.

7. (Previously Presented) The device according to claim 6 further comprising a component adapted to be mounted on a finger of the user.

8. (Cancelled)

9. (Previously Presented) The device according to claim 1 wherein the optical system is in communication with a pulse-oximetry circuit.

10. (Cancelled)

11. (Previously Presented) The device according to claim 1 further comprising an analog-to-digital converter in communication with the motion sensor, the optical system, and the microprocessor.

12. (Currently Amended) A method for monitoring a user's blood pressure while the user is ambulatory, the method comprising:

determining if the ~~user's hand~~ user is at rest or in motion using a motion sensor;

generating with an optical system a time-dependent waveform while the user is at rest, the time-dependent waveform comprising a primary peak and a reflective peak that are, collectively, representative of the user's blood pressure ~~with an optical~~

~~system~~, the optical system comprising a light source and light detector ~~if the user's hand is determined to be at rest~~;

sending the time-dependent waveform to a microprocessor comprised by a body-worn component for processing;

analyzing the primary peak and a reflective peak within the time-dependent waveform ~~from the optical system~~ with a mathematical model by varying parameters of the model until they correspond to the amplitudes of the primary and reflective peaks; and

calculating a blood pressure value from parameters from the model determined from the time-dependent waveform generated when the user is at rest.

13. (Previously Presented) The method according to claim 12 wherein determining if the user's hand is at rest comprises analyzing a signal sent from a motion sensor to the microprocessor with an algorithm operating on a microprocessor.

14. (Currently Amended) The method according to claim [[1]] 13, wherein the motion sensor is an accelerometer.

15. (Currently Amended) The method according to claim [[1]] 13, wherein the motion sensor is a piezoelectric device or a mercury switch.

16. (Currently Amended) The method according to claim [[1]] 13, wherein the motion sensor is a software algorithm that analyzes the time-dependent waveform from the optical system to determine motion.

17. (Currently Amended) The method according to claim [[27]] 13, further comprising wirelessly transmitting the blood pressure value using a radio-frequency transmitter operating a wireless protocol based on 802.15.1, 802.15.4, part-15 or 802.11.

18. (Cancelled)

19. (Currently Amended) A system for monitoring a user's blood pressure while the user is ambulatory, the system comprising:

a blood pressure sensor comprising:

a motion sensor for monitoring motion of the user and configured to generate motion information in response, and

a blood pressure monitor comprising an optical system comprising a light source and a light detector configured to generate a time-dependent waveform comprising a primary peak and a reflective peak that are, collectively, representative of the user's blood pressure ~~related to the user's heart beat~~, and

a body-worn processing unit, connected to the blood pressure sensor through a cable, comprising:

a microprocessor for receiving the time-dependent waveform from the blood pressure monitor and motion information from the motion sensor, the microprocessor comprising computer code that controls the microprocessor to: 1) ~~analyzes~~ analyze the primary peak and the reflective peak comprised by the time-dependent waveform from the blood pressure monitor with a mathematical model by varying parameters of the model until they correspond to the amplitudes of the primary and reflective peaks; 2) ~~analyzes~~ analyze the motion information from the motion sensor to distinguish between time-dependent waveforms generated while the user is moving and while the user is at rest; and 3) ~~calculates~~ calculate a blood pressure value from parameters from the model determined the time-dependent waveform generated when the user is at rest; and

a short-range wireless transmitter for transmitting blood pressure information from the microprocessor to an external receiver.

20. – 24. (Cancelled)

25. (Currently Amended) A device for monitoring a user's blood pressure while the user is ambulatory, the device comprising:

a blood pressure sensor comprising:

a motion sensor for monitoring motion of the user and configured to generate motion information in response; and

a blood pressure monitor comprising an optical system comprising a light source and a light detector configured to generate a time-dependent waveform

comprising a primary peak and a reflective peak that are, collectively, representative of the user's blood pressure ~~related to the user's heart beat~~; and

a body-worn processing unit, connected to the blood pressure sensor through a cable, comprising:

a microprocessor for receiving the time-dependent waveform from the blood pressure monitor and motion information from the motion sensor, the microprocessor comprising computer code that controls the microprocessor to: 1) ~~analyzes~~ analyze the primary peak and the reflective peak comprised by the time-dependent waveform from the blood pressure monitor by taking a derivative of the waveform; 2) analyzing the derivative of the waveform with a mathematical model by varying parameters of the model until they correspond to the derivatives of the amplitudes of the primary and reflective peaks; ~~analyzes~~ 3) analyze the motion information from the motion sensor to distinguish between time-dependent waveforms generated while the user is moving and while the user is at rest; and [[3)]] ~~calculates~~ 4) calculate a blood pressure value from the derivative of the time-dependent waveform and the primary and reflected peaks in the waveform generated when the user is at rest.

26. (Currently Amended) A device for monitoring a user's blood pressure while the user is ambulatory, the device comprising:

a blood pressure sensor comprising:

a motion sensor for monitoring motion of the user and configured to generate motion information in response; and

a blood pressure monitor comprising an optical system comprising a light source and a light detector configured to generate a time-dependent waveform comprising a primary peak and a reflective peak that are, collectively, representative of the user's blood pressure ~~related to the user's heart beat~~; and

a body-worn processing unit, connected to the blood pressure sensor through a cable, comprising:

a microprocessor for receiving the time-dependent waveform from the blood pressure monitor and motion information from the motion sensor, the microprocessor comprising computer code that controls the microprocessor to: 1) ~~analyzes~~ analyze the time-dependent waveform from the blood pressure monitor by

fitting the primary and reflective peaks comprised by the time-dependent waveform with a mathematical model by varying parameters of the model until they correspond to the amplitudes of the primary and reflective peaks; 2) ~~analyzes~~ analyze the motion information from the motion sensor to distinguish between time-dependent waveforms generated while the user is moving and while the user is at rest; and 3) ~~calculates~~ calculate a blood pressure value from parameters determined by fitting the primary and reflective peaks comprised by the time-dependent waveform generated when the user is at rest.

27. (Previously Presented) The method according to claim 12, further comprising wirelessly transmitting the blood pressure value using a radio-frequency transmitter.